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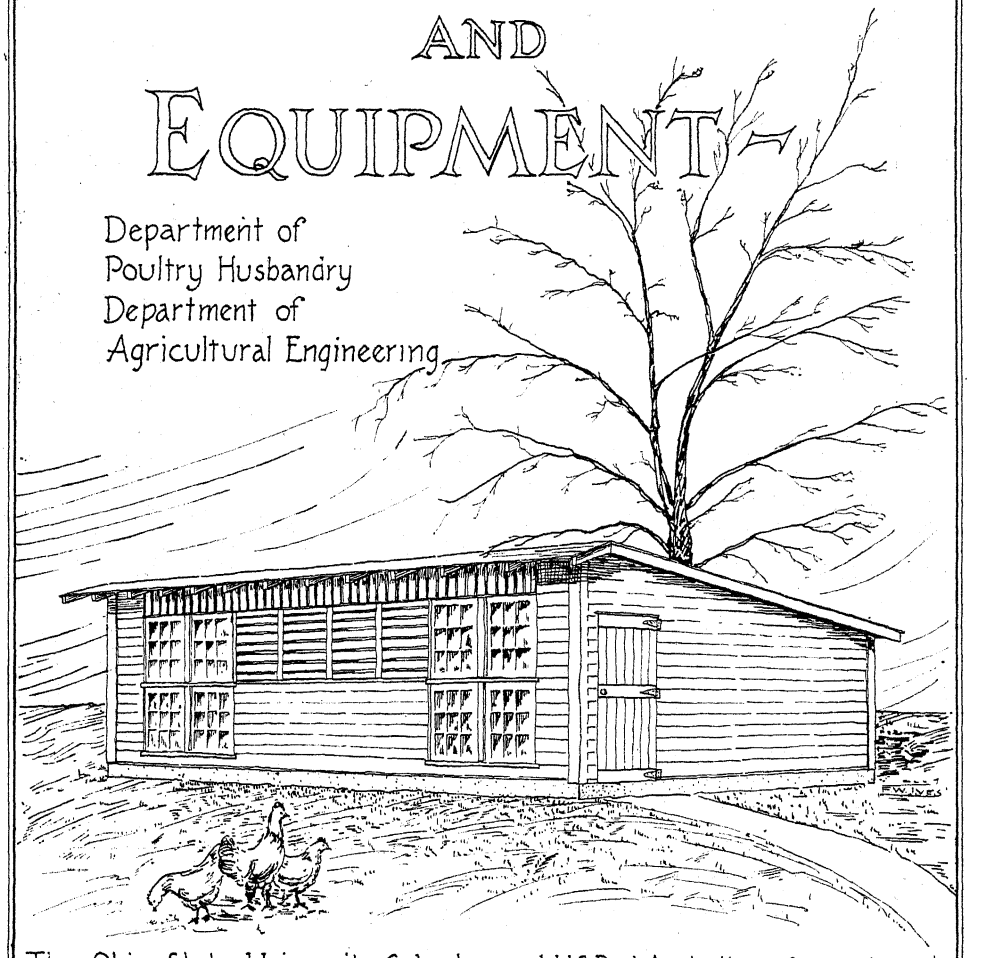
POULTRY HOUSES AND EQUIPMENT

Department of
Poultry Husbandry
Department of
Agricultural Engineering



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Explanation of Terms and Abbreviations

2′-6″ means 2 feet 6 inches.

24″ OC means 24 inches on center.

T & G refers to tongued and grooved lumber.

875 B. M. means 875 board feet.

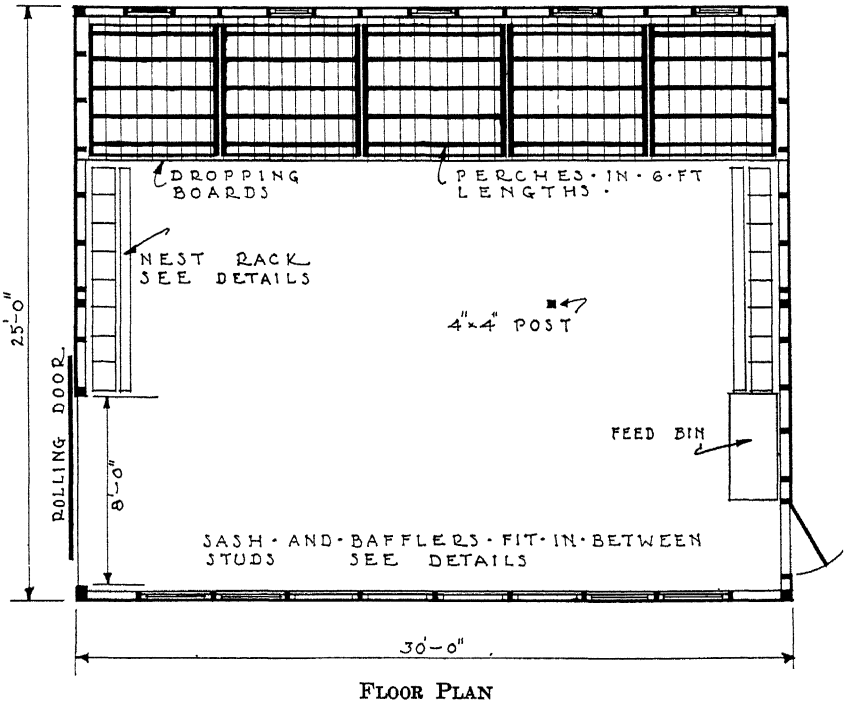
Dimensions are measured from tips of arrows.

A 1:2:4 concrete mixture contains one part cement, two parts sand and four parts crushed stone or coarse gravel.

A 1:2 mortar mixture contains one part cement and two parts sand.

Poultry Houses and Equipment

This bulletin offers working drawings and quantity surveys of three laying houses and their equipment and one brooder house. Plans of all these houses have appeared in previous bulletins. Only minor changes have been made in redrawing them and grouping them under one cover. Such changes have come as the result of experience in actually building the houses.



FLOOR PLAN

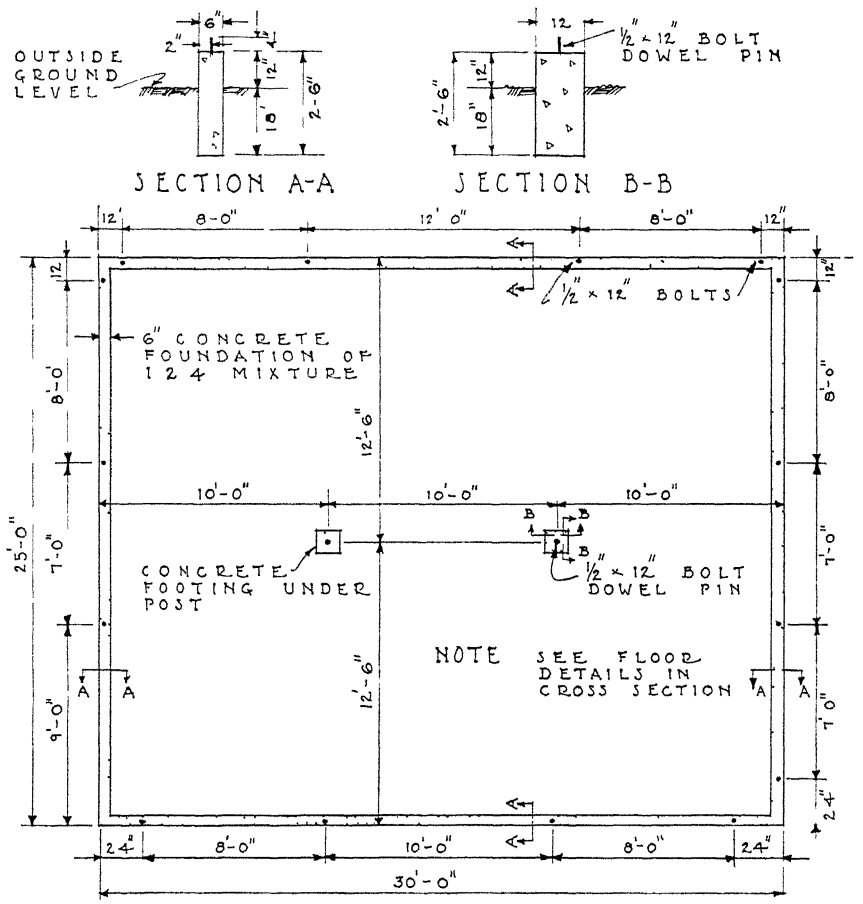
Fig. 1.—Locations of feed bin and nest racks are shown. All windows fit in between studs. Face house south or southeast.

Shed Roof Laying House, 25 by 30 Feet

This house will accommodate 250 leghorns or 200 birds of the heavy breeds. It can be built in any multiple of the length shown. New units can be added on at any time. When more than one unit of the house is built, a feed room should be constructed in one end of the houses or between two units

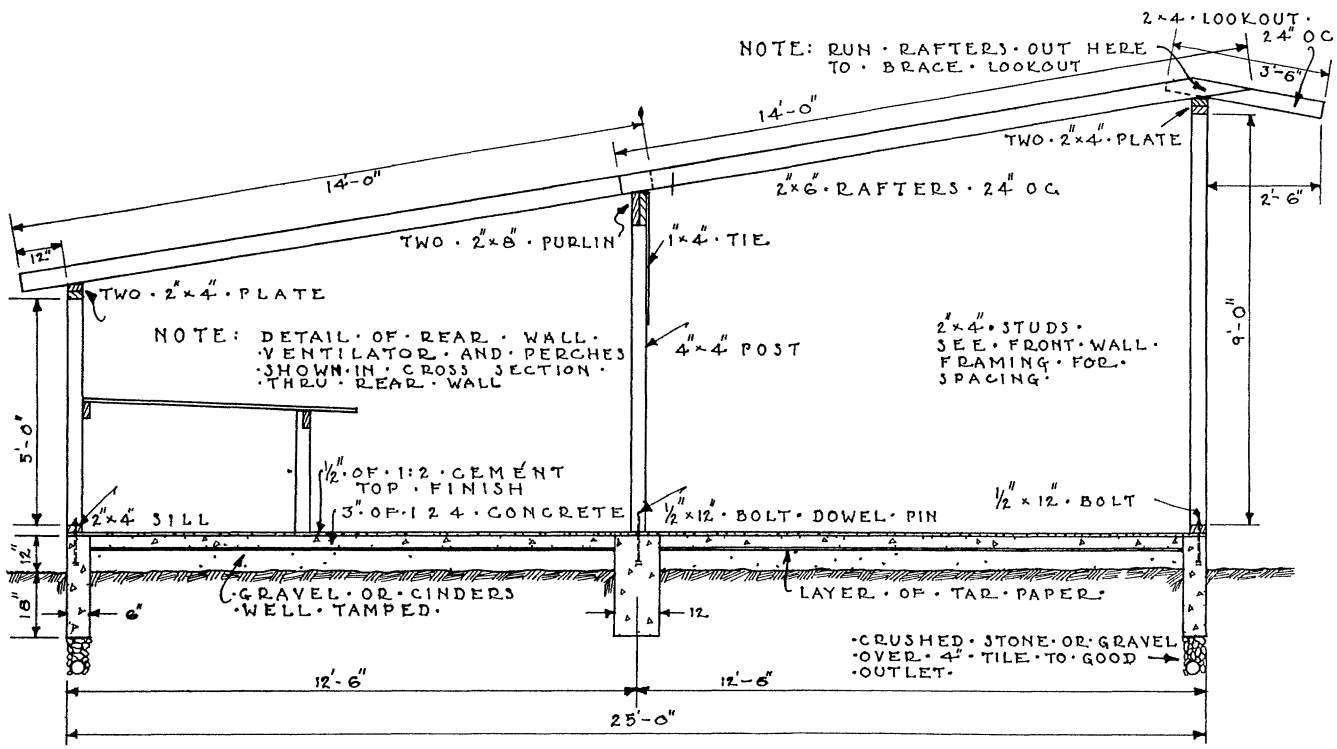
of the house. This room should be at least 10 by 25 feet in size, should provide floor space for mixing the mash, storage bins for grain, shell, and meat scraps; a desk for keeping records; and a table for grading and packing eggs.

Whenever possible, a cellar under this feed room should be provided for root crops and storage. If properly planned, this basement room can be used for incubation during the hatching season, and for crate fattening the broilers for early market.



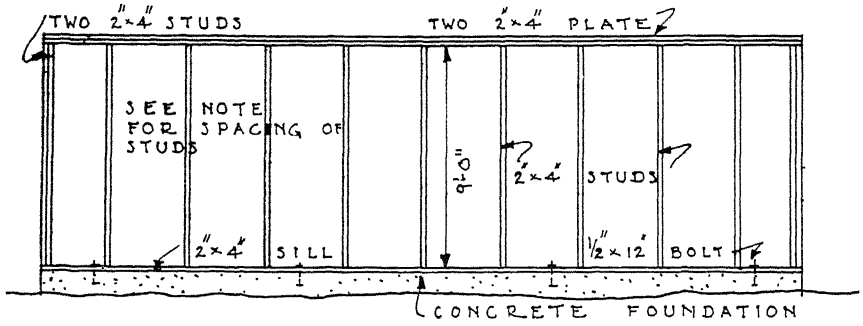
FOUNDATION PLAN

Fig. 2.—Bolts are located so as not to come under studs. Place bolts head downward, two inches in from the outside edge of the wall so as to be in the center of the 2 by 4-inch sill. Top of bolt to be 3 inches above top of the foundation. Face the house south or southeast.



CROSS SECTION

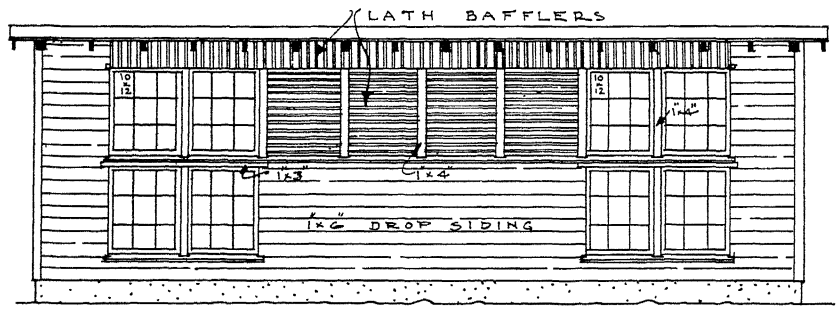
Fig. 3.—Put in floor drain if it is desirable to flush out the house at any time. The 4-inch tile can be omitted in well drained soil. Prevent the entrance of surface water by making the top of the floor 12 inches above the outside ground level. Prevent a damp floor by putting in the layer of coarse gravel and the layer of tar paper to break the capillary water. In well drained gravelly soils these may be omitted. Give the floor a hard smooth wearing coat of 1:2 cement. This finishing coat makes cleaning easier and prevents the hens wearing away their toe nails.



FRONT WALL FRAMING

Fig. 4.—In marking out the position of the studs begin at the center, and work out. Space the studs the width of the glass window sash, allowing a small amount for "play" to permit sliding windows up and down. Place a stud on the center line and set the remainder of the studs the required distances both ways out from this center stud.

In erecting the front wall it is a good plan to do all the work that is possible on the ground. This is best accomplished by nailing the sills, plates, and studs together on the floor and then raising the entire wall as the unit into its vertical position. The holes for the bolts should be bored in the sill before nailing it to the studs. It will require four to six men to raise the wall by this method. If not so many men are available it can be raised in sections.

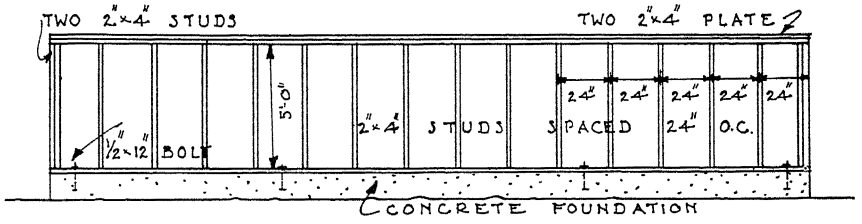


FRONT ELEVATION

Fig. 5.—Face the house south or southeast. The top row of lath baffles are not removable. The four lower lath baffle windows are removable and are the same size as the glass window sash. Making these the same size permits of substituting glass sash for lath baffle sash. Run the siding ¾-inch past the studs to act as a casing for the windows.

Don't make the mistake of covering the baffles with muslin or burlap in winter. A poorly ventilated, damp house will result. It is not so much the cold that should be avoided as it is the dampness. The combs of chickens will freeze in a cold, damp house, but rarely in a cold, dry house.

If the house is located on an exposed, windy site it may be that the amount of baffle shown in the plan will prove too much. If such is the case, instead of covering the baffle with muslin buy one or more glass sash and put them in place of the baffle sash.



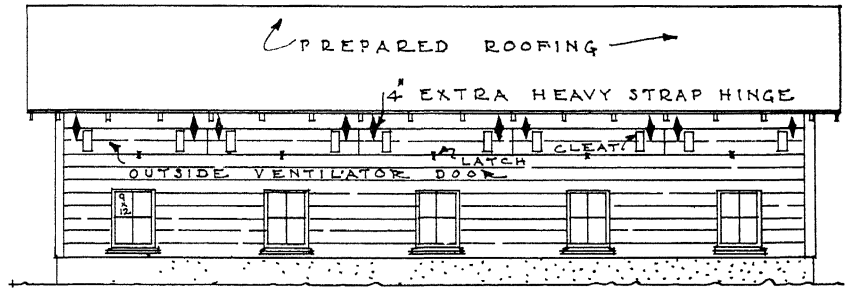
REAR WALL FRAMING

Fig. 6.—Studs are spaced 24 inches on center. Window sash fit in between studs.

The sill is made of one 2" × 4" bolted to the foundation. The end studs and plate are made of 2" × 4" material doubled to give greater stiffness to the building.

This Rear Wall Framing and the Rear Elevation shown in Fig. 7 are the same for the three laying houses.

It is good carpentry to construct the rear wall on the floor and raise it to its position in a similar manner as described in Fig. 4.

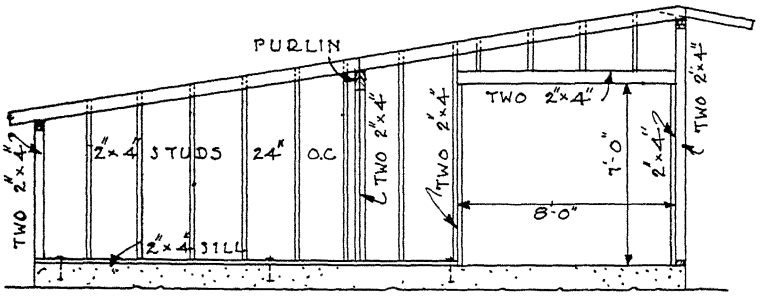


REAR ELEVATION

Fig. 7.—Run siding ¾-inch past studs to form a casing for the windows. The outside ventilator door is made of 2 drop siding boards. The doors are in 6-foot lengths, and extend across the house.

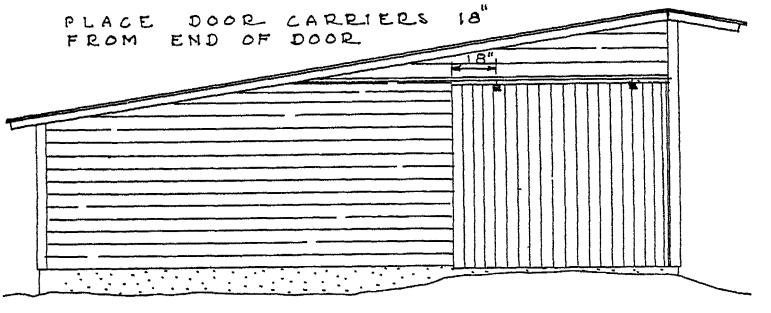
Note the five windows. These windows come underneath the dropping boards. When the light comes from one direction the hen always faces in that direction when she scratches. In consequence there is a gradual movement of the litter toward the back of the house. With these windows underneath the dropping boards this trouble is eliminated, since the light is evenly distributed from front and rear. The hens scratch in various directions, and the litter never piles up in any part of the house.

Providing plenty of light underneath the dropping boards also discourages the laying of eggs on the floor.



END WALL FRAMING

Fig. 8.—A driveway door can also be placed on the other end of the house if so desired. This arrangement permits of driving thru the front part of the house with a manure spreader or wagon. The litter can be tossed into the spreader and carried directly to the fields. In a large house where labor is a big factor this driveway arrangement is especially important.

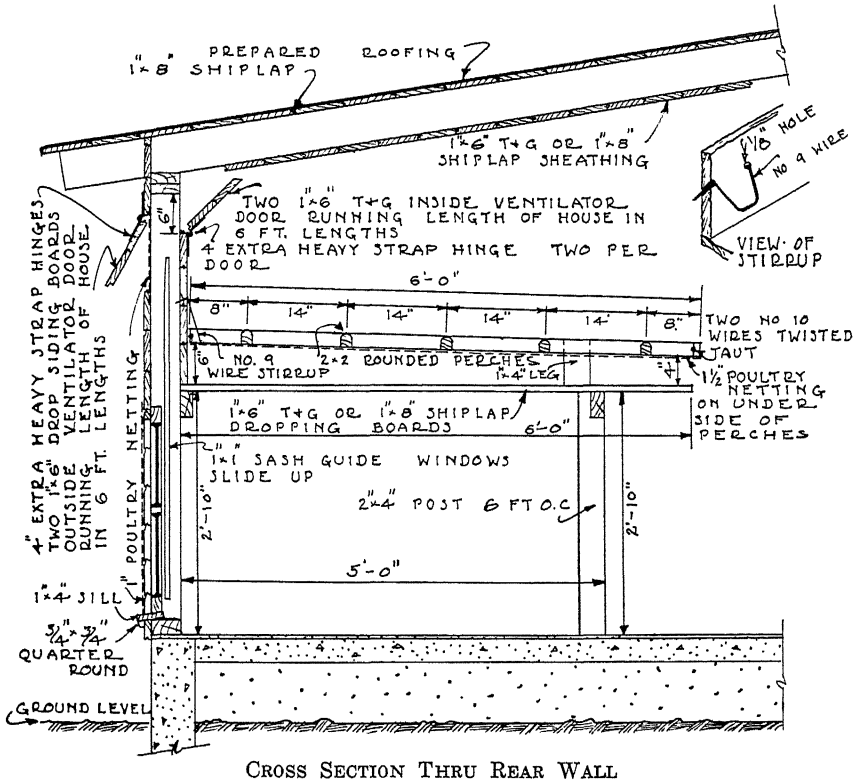


END ELEVATION

Fig. 9.—Place the door hangers back from the end of the door, otherwise the hanger will hit the roof sheathing before the door is fully open. Hinged doors on the inside of the house screened with 1-inch mesh poultry netting allow the big driveway door to be open in summer time. This will mean excellent ventilation.

Windows are sometimes placed in the ends of the houses. However, they must be so located that the nests on the walls do not cover them.

Note the overhang in front of the house. This overhang prevents driving rains or snows from entering the house when the top windows and baffles are lowered. This overhang also adds to the appearance of the house.



CROSS SECTION THRU REAR WALL

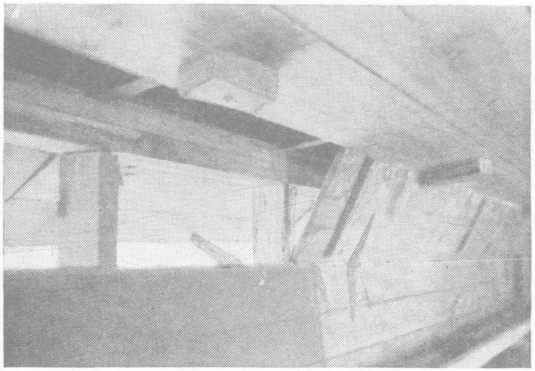
Fig. 10.—Windows on the north side under dropping boards provide light in winter, ventilation in summer, and prevent the hens working the straw toward the rear of the house. The windows are made to slide up by means of a cord fastened to the top of the sash and run up between the studs and the rafters. This arrangement permits the opening of the windows from the front of the dropping board. These windows may serve as fowl exits.

The perches are made in 6-foot sections and rest on two 1" × 4" legs in front and hang on two No. 9 wire stirrups in the rear. Nail 1½-inch mesh poultry netting to the under side of the perches as shown in Figures 14 and 32. This construction will keep the birds off the dropping boards and aid in the prevention of disease and intestinal worms. It will also lessen the number of spoiled eggs, and greatly reduces the labor of cleaning the dropping boards since the birds cannot walk on them. Eggs laid at night will be saved and the hens will not get the egg-eating habit.

A double wall construction is shown extending as far out in front as the edge of the dropping boards. This double wall permits of the ventilation system in the rear wall without any resulting draft on the roosting birds. It also provides an air space around them on the outside surface thus making the roosting quarters warmer.

The ventilator doors are the main part of this ventilation system. The inner door is set diagonally as shown to permit the fresh air entering by the

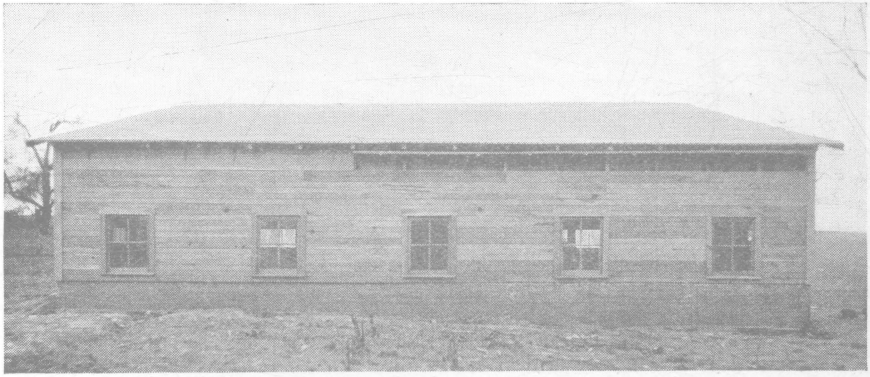
outside door to pass up thru the rafters and into the front part of the house. Both doors are to be kept closed in winter and during the cool months of spring and fall. The outside door should be open during summer. The inner door is to be opened only during the hot weather. The inside sheathing and dropping boards should be shiplap or tongue and groove boards, so that no cracks will allow drafts to blow on the roosting birds.



VENTILATOR DOORS

Fig. 11.—A photograph taken with the camera above the dropping boards looking out thru the ventilator doors. The outside door is open and propped up by sticks. One inside door is open, while another is shown closed. Note how the inside doors are built diagonally across the corners to permit fresh air to pass up thru the rafters and into the house.

No poultry netting is shown covering this opening but it should be used to keep out sparrows.



REAR VIEW OF A HOUSE

Fig. 12.—This photograph shows the rear ventilator doors. The five windows provide plenty of light in the rear of the house underneath the dropping boards. They may be opened in summer and will insure excellent ventilation for the hens.

The casings around the windows are unnecessary if the siding is run ¾ inch past the studs. The siding will then act as a casing for the windows.

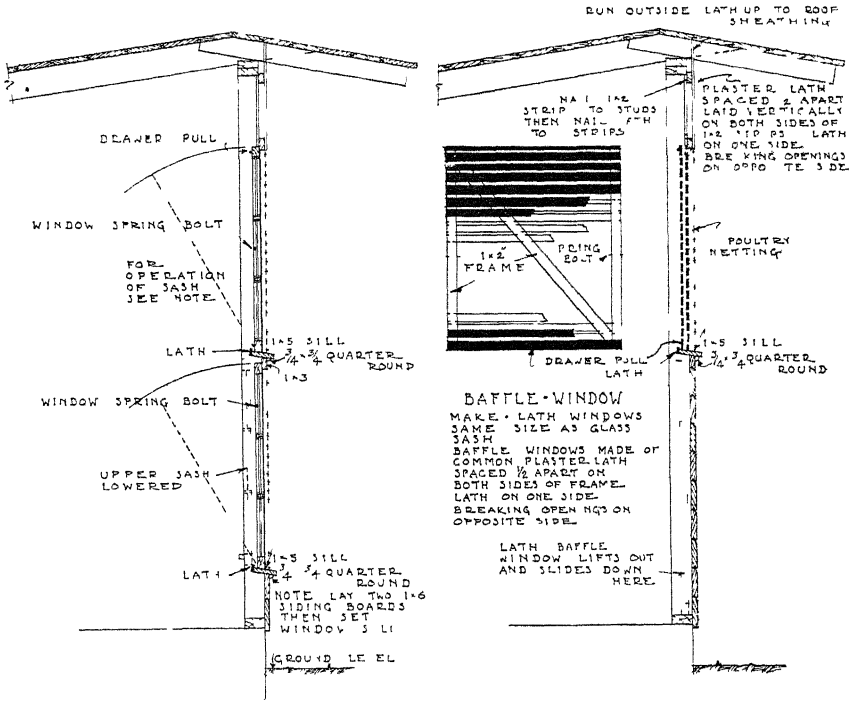


FIG. 13.—CROSS SECTION THRU WINDOWS

Window details are shown in Fig. 13. The studs serve as window frames. The siding is run ¾-inch past the studs to act as a casing. Place the lower window sill after 2 siding boards are set, as indicated in the drawing. Then work out the position of the other sills as determined by the height of the sash. Let the 1" × 2" strips for the top lathe baffle come at the top of the top sash.

The windows are to be constructed so that they operate in much the same manner as the plate glass windows in a sedan. They lift out and slide down. When closed, the sash are held in place by two window spring bolts and by the lath at the bottom. This lath nailed to the sill prevents the wind "kicking" the sash out. It also acts as a hinge in case it is desired to swing the sash in at the top without lifting the sash out. In summer time the upper sash is lifted out and placed down back of the lower sash as shown by the dotted outline in the drawing.

Lathe baffle windows shown in the front wall are superior to muslin windows. Dirty or wet muslin will not let fresh air in. Constructed as shown the lath window breaks the wind and rain and provides excellent ventilation. The lath baffle windows are made the same size as the glass window sash. This will permit of substituting glass sash for lath sash. The lath sash are held in place and lowered the same as the glass sash. Cut finger openings in the lath to reach the spring bolts.

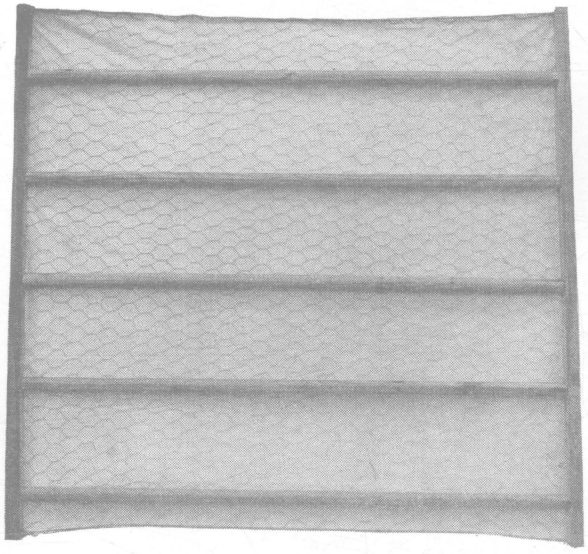


FIG. 14.—A PERCH SECTION

Fig. 14 shows a view of a perch section with poultry netting nailed underneath. The perches are 2″ × 2″ with rounded tops. The end pieces are 2″ × 2″ but not rounded. Use 16d nails in nailing end pieces to perches. Double No. 10 wire made taut by twisting is used across the front and rear to keep the edge of poultry netting from sagging. See also Fig. 32.

Quantity Survey for Shed Roof Laying House, 25 by 30 Feet

Concrete

Foundation and post footing (5 1/3 cubic yards—1:2:4 mixture).
- Portland cement....32 sacks
- Sand....2½ cubic yards
- Stone....5 cubic yards

Floor (7 cubic yards—1:2:4 mixture)
- Portland cement....41 sacks
- Sand....3 cubic yards
- Stone....6 cubic yards

For finish (1¼ cubic yards—1:2 mixture)
- Portland cement....15 sacks
- Sand....1¼ cubic yards

Dimension Lumber

Use	No. Pieces	Size Inches	Length Feet
Front sill	1	2 × 4	16
Front sill	1	2 × 4	14
Rear sill	1	2 × 4	16
Rear sill	1	2 × 4	14
End sill	1	2 × 4	16
End sill	1	2 × 4	9
End sill	1	2 × 4	18
Front plate	2	2 × 4	16
Front plate	2	2 × 4	14
Rear plate	2	2 × 4	16

Dimension Lumber (Continued)

Use	No. Pieces	Size Inches	Length Feet
Rear plate	2	2 × 4	14
Front studs	13	2 × 4	9
Rear studs	18	2 × 4	5
End studs	7	2 × 4	16
End studs	8	2 × 4	14
Door header	2	2 × 4	8
Purlin	2	2 × 8	16
Purlin	2	2 × 8	14
Posts	2	4 × 4	7
Rafters	32	2 × 6	14
Lookouts (16 pieces 3'-6" long)	4	2 × 4	14
Dropping board frame	2	2 × 4	16
Dropping board frame	2	2 × 4	14
Posts (2'-10" long)	1	2 × 4	16
Perches	35	2 × 2	6

Miscellaneous Lumber

1160 feet B. M. 1" × 8" shiplap roof sheathing
850 feet B. M. 1" × 6" drop siding, 14 and 16 ft. lengths
340 feet B. M. 1" × 6" T. & G. or 1" × 8" shiplap inside sheathing, 14 and 16 ft. lengths
210 feet B. M. 1" × 6" T. & G. or 1" × 8" shiplap dropping boards, 12 feet lengths
300 plaster lath
8 pieces 1" × 2", 12 ft. long, frame, for lath baffle windows
3 pieces 1" × 5", 14 ft. long, window sills
1 piece 1" × 3", 14 ft. long, window sill support
4 pieces 1" × 4", 14 ft. long, window casings
1 piece 1" × 4", 12 ft. long, window sill
4 pieces ¾" × ¾", 14 ft. long, quarter round
2 pieces 1" × 4", 10 ft. long, corner board
2 pieces 1" × 3", 10 ft. long, corner board
1 piece 1" × 4", 12 ft. long, corner board
1 piece 1" × 3", 12 ft. long, corner board
3 pieces 1" × 8", 9 ft. long, door frame
1 piece 1" × 2", 12 ft. long, door frame
1 piece 1" × 8", 10 ft. long, door frame
1 piece 1" × 2", 14 ft. long, door frame
2 pieces 1" × 4", 16 ft. long, verge board
2 pieces 1" × 4", 14 ft long, verge board
5 pieces 1" × 1", 10 ft. long, window guides

Hardware, Roofing, Sash, Etc.

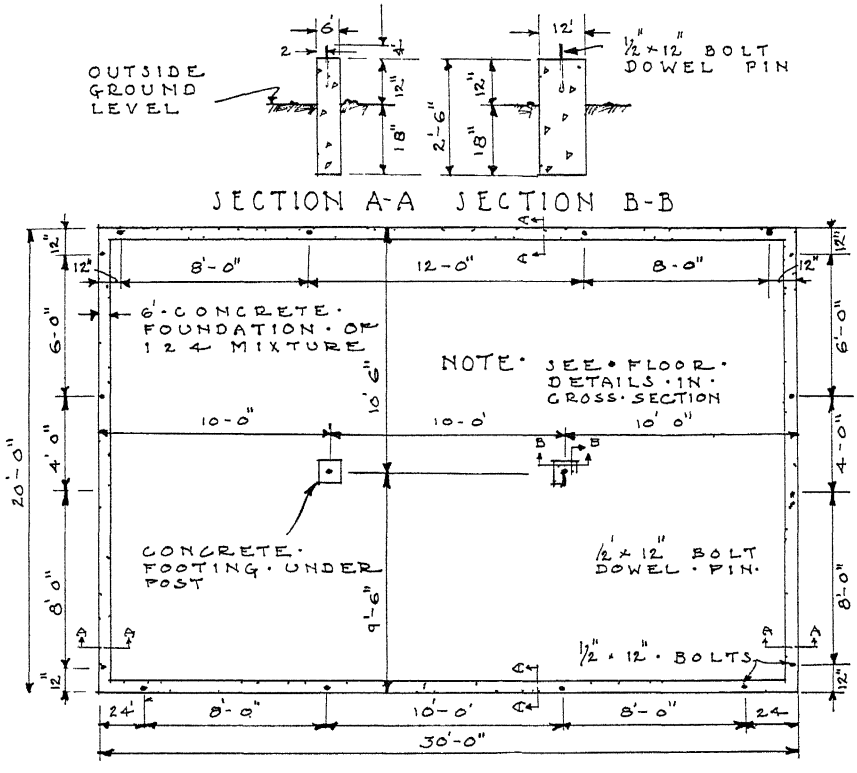
10 rolls prepared roofing
8 rolls tarred felt building paper for floor
8 9-light 10″ × 12″ sash
5 4-light 9″ × 12″ sash
24 window spring bolts
16 drawer pulls
30 linear ft. 1½″ poultry netting, 6 ft. wide, for perches
50 linear ft. 1″ poultry netting, 42″ wide, for window openings
30 linear ft. 1″ poultry netting, 12″ wide, ventilator door openings
20 extra heavy strap hinges, 4″, for ventilator doors
3 extra heavy T. hinges, 6″, for door
14 ft. track for rolling door
2 rolling door hangers
1 door latch
150 ft. No. 10 wire
4 lbs. 3d fine lath nails
30 lbs. 6d nails
20 lbs. 8d nails
16 lbs. 10d nails
3 lbs. 16d nails
8 lbs. 20d nails
3 lbs. 30d nails
2 lbs. poultry netting staples
17 ½″ × 12″ bolts with nuts and washers

Shed Roof Laying House, 20 by 30 Feet

This house will accommodate 200 leghorns or 150 birds of the heavy breeds. The plans show a one-unit house 30 feet long, but a house can be built any number of units long. A feed room is a necessary part of a larger house. This feed room can be built at one end of the house or in the middle between two units. This house is similar to the preceding house except in width.

Floor Plan

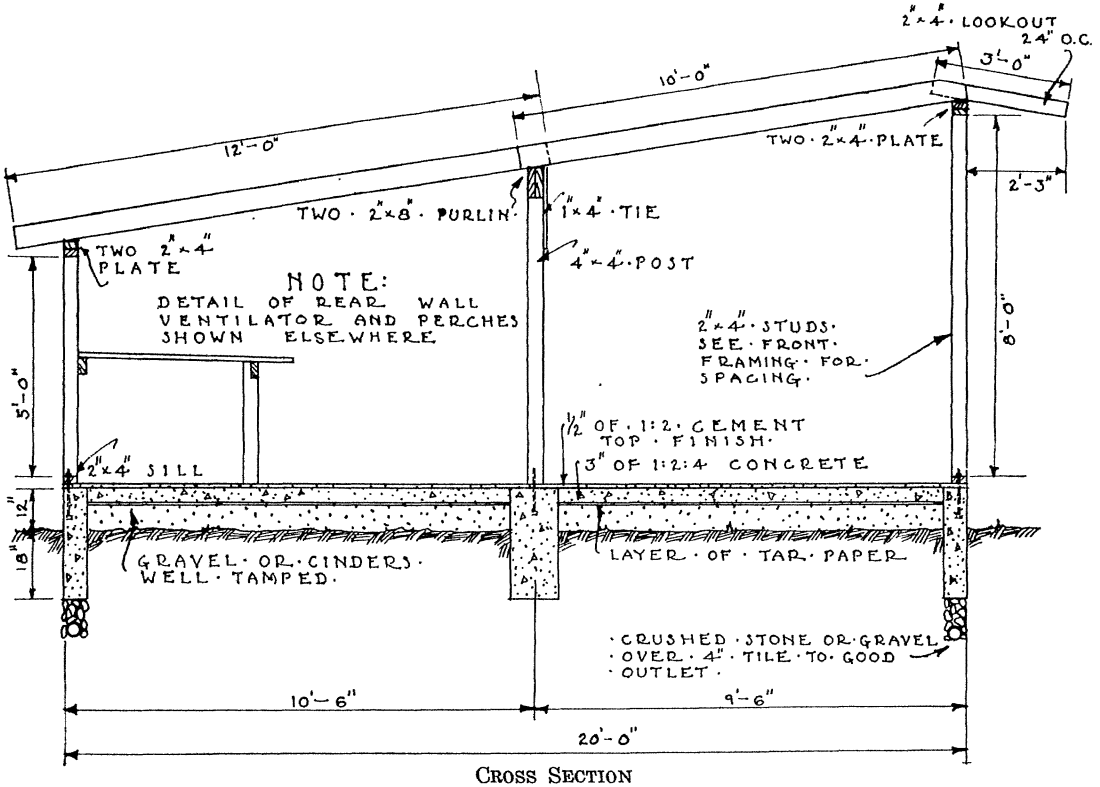
The floor plan for this house is the same as that for the 20 by 30-foot combination roof house shown in Fig. 24, except that double swinging doors are on one end as shown in Fig. 20 instead of the single 4-foot door as in Fig. 29.



Foundation Plan

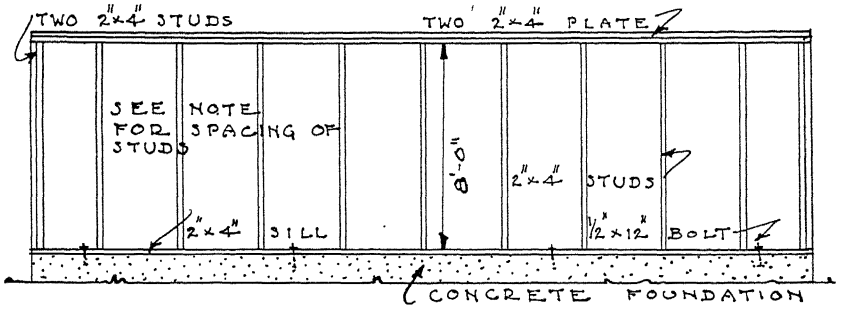
Fig. 15.—The foundation is a 6-inch concrete wall made of one part portland cement, two parts sand, and four parts coarse gravel or crushed stone. The sills are fastened to the foundation by ½" × 12" carriage bolts set two inches from the outer edge of the wall and spaced to miss the studs.

In clay soils, tile and crushed stone should be placed beneath the concrete as shown in Fig 16. The layer of tar paper insures a dry floor. A ½" × 12" dowel pin is set in the middle of each center pier to secure the base of the purlin posts. (Read notes under Fig. 2.)



CROSS SECTION

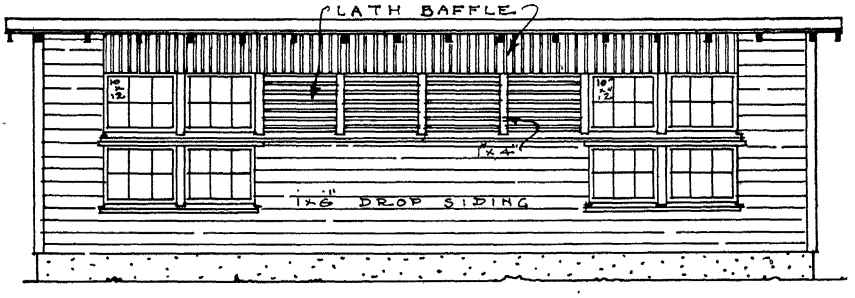
Fig. 16.—The floor three inches thick is made of 1:2:4 concrete, with a top coat ½" thick of 1:2 mortar trowelled to a smooth finish. A smooth surface prevents wearing of the birds' toe nails. In poorly drained soils the concrete floor should be laid on a base of several inches of coarse gravel or cinders covered with a layer of heavy tarred paper. This tarred paper breaks the capillary water which is the cause of damp floors. The floor level should be 12" higher than the ground outside the house to keep out surface water. (Read notes under Fig. 3.)



FRONT WALL FRAMING

Fig. 17.—Studs are spaced the width of glass window sash apart. Locate one stud at the central point along the front sill. Mark off the other studs on each side of this one, leaving space enough for a window sash between them. Allow ¼-inch for "play" to permit the window being easily opened. The end studs and plate are doubled.

In erecting the front wall it is a good plan to do all the work that is possible on the ground. This is best accomplished by nailing the sills, plates, and studs together on the floor, and then raising the entire wall as the unit into its vertical position. The holes for the bolts should be bored in the sill before nailing it to the studs. It will require four to six men to raise the wall by this method. If not so many men are available it can be raised in sections.

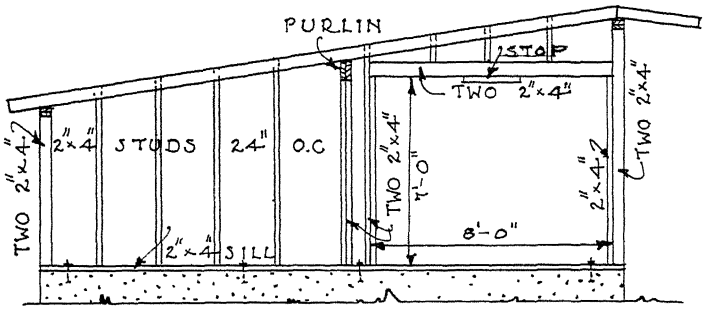


FRONT ELEVATION

Fig. 18.—The eight front window sash and the four baffle sash are of the same size and interchangeable. This makes it possible to better adapt the ventilation to the climate. The upper baffles are not removable. The siding should extend ¾-inch past the studs to act as a casing. Fig. 21 shows the details of window construction.

REAR WALL FRAMING AND ELEVATION

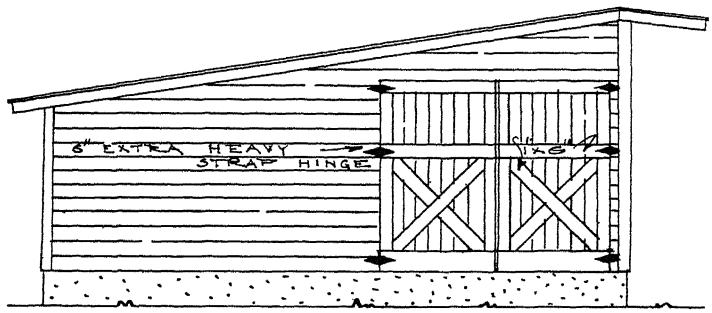
The rear wall framing and elevation for this house are the same as shown for the 25- by 30-foot house in Figs. 6 and 7.



END WALL FRAMING

Fig. 19.—An 8-foot double door is shown. These doors must be hung with hinges, as there is not clearance enough for a roller door as in the 25- by 30-foot house. If a double door is not desired, a single door 3½ or 4 feet wide may be used.

A driveway door can also be placed on the other end of the house. This arrangement permits of driving through the front part of the house with a manure spreader or wagon.



END ELEVATION

Fig. 20.—A double door may be placed at either end or at both ends if desired. A single door may be substituted if preferred. The quantity survey is for a double door at one end.

CROSS SECTION THRU REAR WALL

The rear wall construction of this house is the same as that shown in Fig. 10 except that dropping boards are 5 feet long instead of 6 feet. Also the dimensions and number of perches are different. The perches for this house are the same as for the 20- by 30-foot combination roof house shown in Fig. 32.

WINDOW DETAILS

Fig. 21.—Special window frames are not required. The sash fit in between two studs. They are held from falling out by extending the siding boards ¾ inch past the studs. The sides of the sash and baffle frames not in contact with the siding boards are held in place by 1″ × 4″ strips nailed to the studs. They rest on a 1″ × 5″ window sill notched to fit between the studs. Each sash is held in place by two window spring bolts.

The upper windows and the baffle frames may be removed and placed in the space directly beneath them as shown by the dotted lines. (Read notes under Fig. 13.)

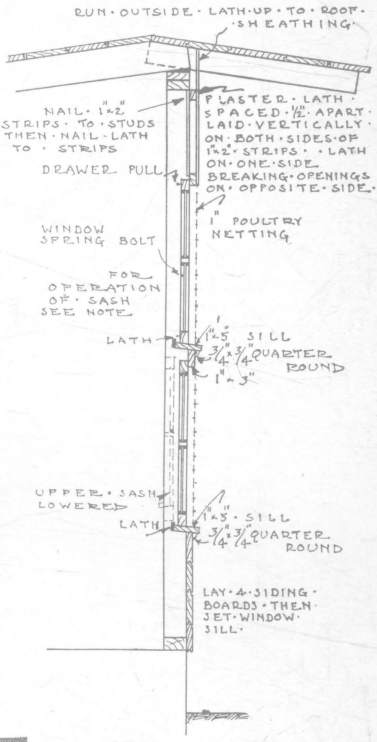


FIG. 21

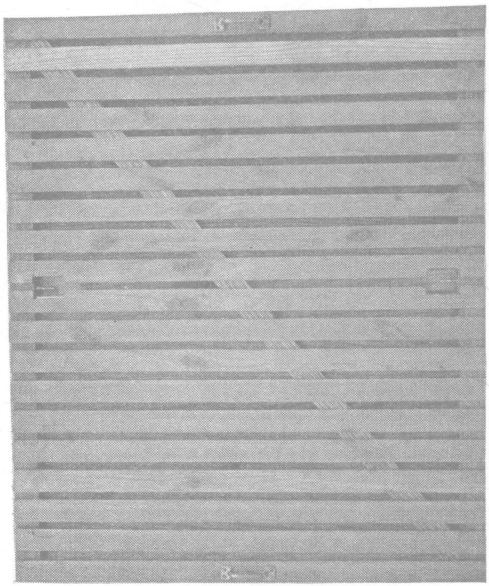


Fig. 22.—Detail of lath baffle sash

LATH BAFFLE

Fig. 22 shows a photograph of a baffle window. These baffle windows are made the same size as the glass window sash. They are constructed of common plastering lath spaced ½-inch apart nailed to both sides of a 1″ × 2″ frame. The lath on one side are nailed on the frame to break the openings between the lath on the other side. This type of ventilator window provides excellent ventilation without drafts.

Quantity Survey for Shed Roof Laying House, 20 by 30 Feet

Concrete

Foundation and post footing (5 cubic yards, 1:2:4 mixture)
- Portland cement....30 sacks
- Sand....2¼ yards
- Stone....4½ yards

Floor (5½ cubic yards, 1:2:4 mixture).
- Portland cement....33 sacks
- Sand....2½ yards
- Stone....5 yards

Top finish (1 cubic yard, 1:2 mixture)
- Portland cement....13 sacks
- Sand....1 cubic yard

Dimension Lumber

Use	No. Pieces	Size Inches	Length Feet
Front sill	1	2 × 4	16
Front sill	1	2 × 4	14
Rear sill	1	2 × 4	16
Rear sill	1	2 × 4	14
End sill	4	2 × 4	10
Front plate	2	2 × 4	16
Front plate	2	2 × 4	14
Rear plate	2	2 × 4	16
Rear plate	2	2 × 4	14
Front studs	13	2 × 4	8
Rear studs	18	2 × 4	5
End studs	11	2 × 4	14
Door header	2	2 × 4	8
Purlin	2	2 × 8	16
Purlin	2	2 × 8	14
Posts	2	4 × 4	7
Rafters	16	2 × 6	12
Rafters	16	2 × 6	10
Lookouts, 3′ long	4	2 × 4	12
Dropping board frame	2	2 × 4	16
Dropping board frame	2	2 × 4	14
Post (2′-10″ long)	1	2 × 4	16
Perches	30	2 × 2	6

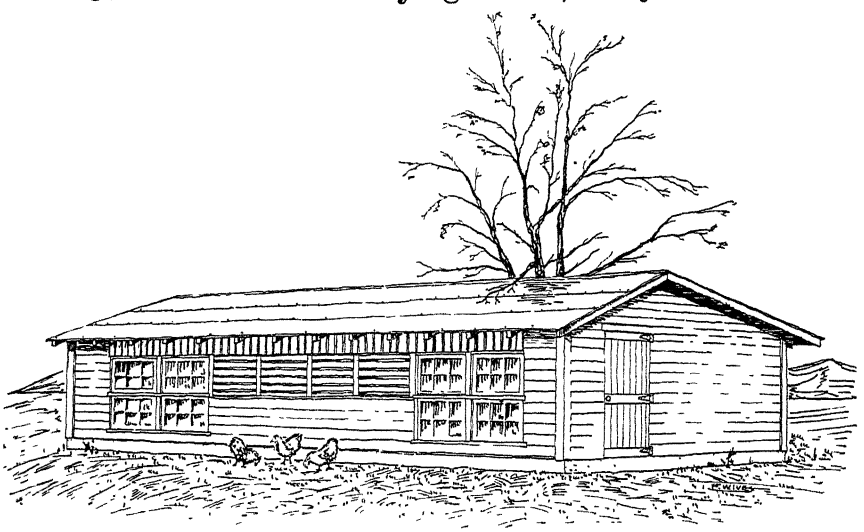
Miscellaneous Lumber

875 ft. B. M. 1″ × 8″ shiplap roof sheathing
750 ft. B. M. 1″ × 6″ drop siding 14 and 16 ft. lengths
300 ft. B. M. 1″ × 6″ T. & G. or 1″ × 8″ shiplap inside sheathing, 14 and 16 ft. lengths
175 ft. B. M. 1″ × 6″ T. & G. or 1″ × 8″ shiplap dropping board 10 ft. lengths
250 lath
7 pieces 1″ × 2″, 12 ft. long, frame for lath baffle windows
3 pieces 1″ × 5″, 14 ft. long, window sills
1 piece 1″ ×3″, 14 ft. long, window sill support
1 piece 1″ × 4″, 12 ft. long, window sill
2 pieces 1″ × 4″, 10 ft. long, window casings
4 pieces ¾″ × ¾″, 14 ft. long, quarter round
2 pieces 1″ × 4″, 9 ft. long, corner boards
2 pieces 1″ × 3″, 9 ft. long, corner boards
1 piece 1″ × 4″, 12 ft. long, corner boards
1 piece 1″ × 3″, 12 ft. long, corner boards
2 pieces 1″ × 6″, 9 ft. long, door frame
1 piece 1″ × 8″, 9 ft. long, door frame
2 pieces 1″ × 6″, 14 ft. long, door frame
2 pieces 1″ × 6″, 10 ft. long, door frame
2 pieces 1″ × 2″, 14ft. long, door stop
4 pieces 1″ × 4″, 12 ft. long, verge board
5 pieces 1″ × 1″, 10 ft. long, window guide

Hardware, Sash, Roofing, Etc.

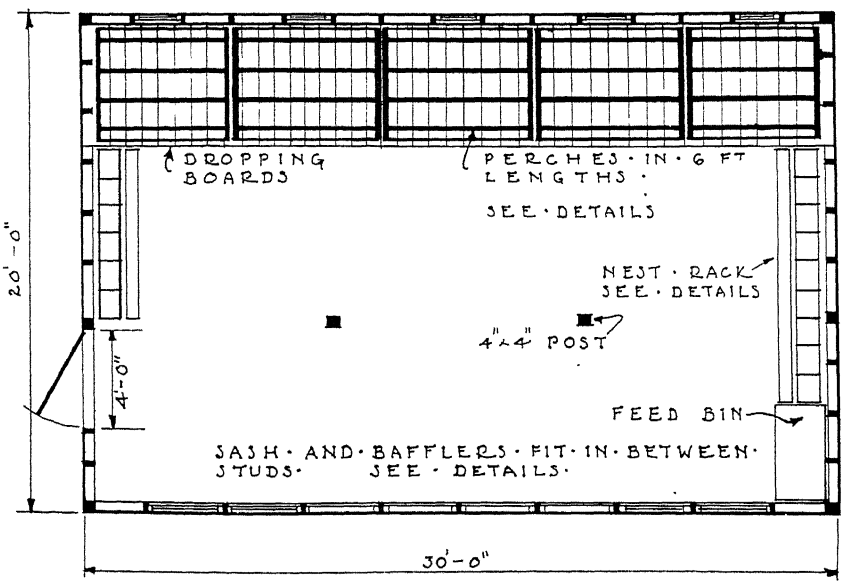
8 rolls prepared roofing
6 rolls tarred felt building paper for floor
8 6-light 10″ × 12″ sash
5 4-light 9″ × 12″ sash
24 window spring bolts
16 drawer pulls
30 linear ft. 1½″ poultry netting, 5 ft. wide
50 linear ft. 1″ poultry netting, 30 inches wide
30 linear ft. 1″ poultry netting, 12″ wide
20 extra heavy strap hinges, 4″, for ventilator doors
9 extra heavy strap hinges, 6″
2 door latches
150 ft. No. 10 wire
4 lbs. 3d nails (fine lath)
28 lbs. 6d nails
18 lbs. 8d nails
15 lbs. 10d nails
3 lbs. 16d nails
5 lbs. 20d nails
3 lbs. 30d nails
2 lb. poultry netting staples
17 ½″ × 12″ bolts with nuts and washers

Combination Roof Laying House, 20 by 30 Feet



A SINGLE UNIT HOUSE

Fig. 23.—An architect's drawing of the combination roof house.

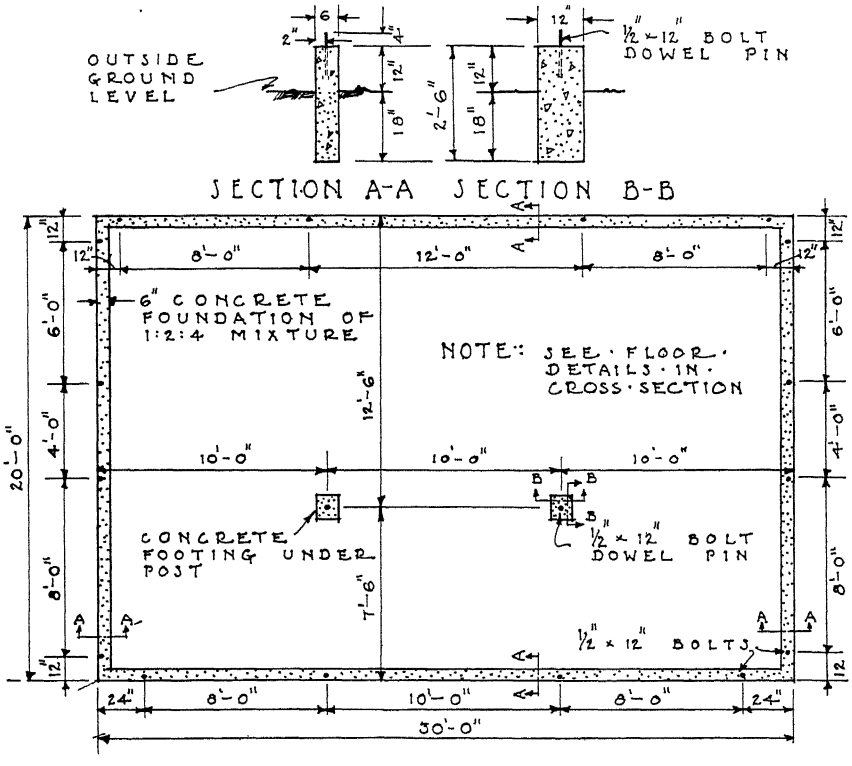


FLOOR PLAN

Fig. 24.—This cut shows the location of roosts, nests, feed bin, windows and door.

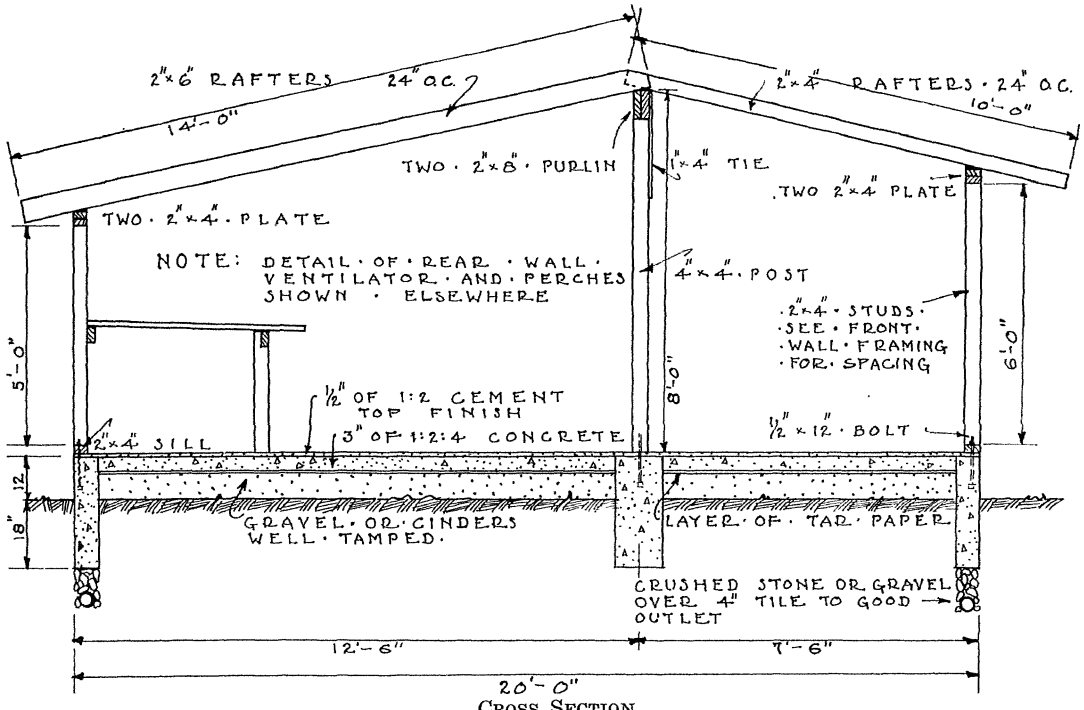
This house will accommodate 200 leghorns or 150 birds of the heavy breeds. The plans shows a house one unit long. A longer house can be built any multiple of this unit. A feed room located at the end or in the middle of the longer house is a necessary part of the building. This room should provide floor space for mixing the mash, storage bins for grain, shell, and meat scraps; a desk for keeping records; and a table for grading and packing eggs.

This house is well fitted for the average farm flock. It is neat in appearance and is easy to construct. Note how the rafters rest on top of the purlin. The rafters need not be notched out for the plate and purlin. The front rafters are run out in front to serve as an overhang. This overhang prevents driving rains and snows from entering the house when the top windows are lowered.



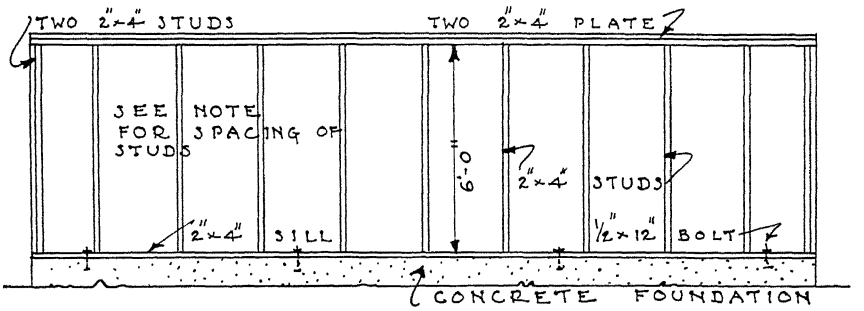
FOUNDATION PLAN

Fig. 25.—The foundation wall is 6 inches thick and extends 18 inches into the ground. The concrete is made of one part cement, two parts sand, and four parts coarse gravel or crushed stone. Carriage bolts, ½" x 12", set in the concrete two inches from the outside wall are used to bolt the sill to the foundation. They are spaced so as not to come directly under a stud. (Also read note to Fig. 2.)



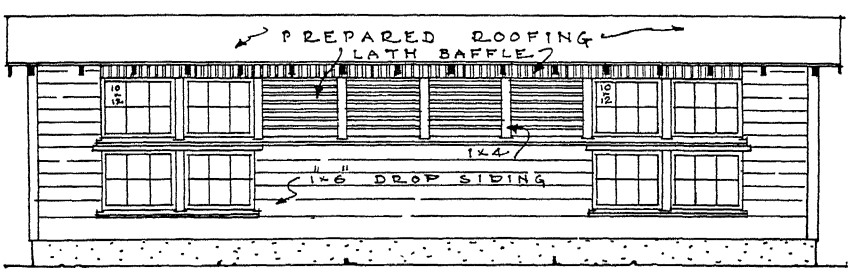
CROSS SECTION

Fig. 26.—In poorly drained soils a tile placed beneath the foundation as shown will go far toward insuring a dry floor. Absolute protection against dampness will be secured by laying the floor on a base of well tamped gravel or cinders covered with a layer of tarred paper. The floor should be given a smooth finish made of one part cement and two parts clean sand. This smooth surface prevents the hens wearing away their toe nails. (Also read note to Fig. 3).



FRONT WALL FRAMING

Fig. 27.—Space studs width of glass window sash. In spacing the studs, locate one at the middle point of the front sill. Place the other studs on each side of this, leaving space for a sash between them. Allow about ¼-inch more than the width of a sash so they will work easily. The end studs and plate are doubled. The sill is single and bolted to the foundation.



FRONT ELEVATION

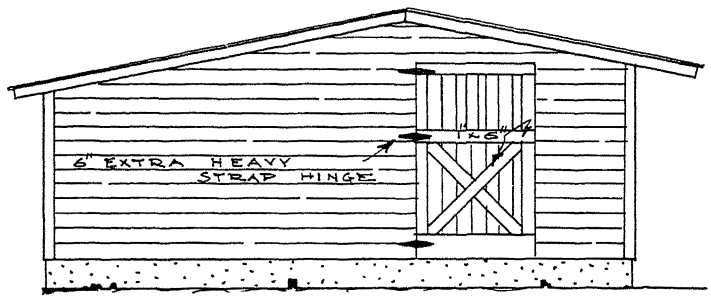
Fig. 28.—The window sash and baffle sash are the same size and interchangeable. This makes it possible to adjust the window and baffle space to climatic and weather conditions by substituting one for the other. The upper row of baffles is not removable. The siding boards extend ¾-inch past the studs to hold the window sash in. Where there is no siding 1" x 4" strips are nailed vertically to the studs to hold the sash in place.

REAR WALL FRAMING AND REAR ELEVATION

The rear wall framing and elevation for this house are the same as shown for the 25- by 30-foot house in Figs. 6 and 7.

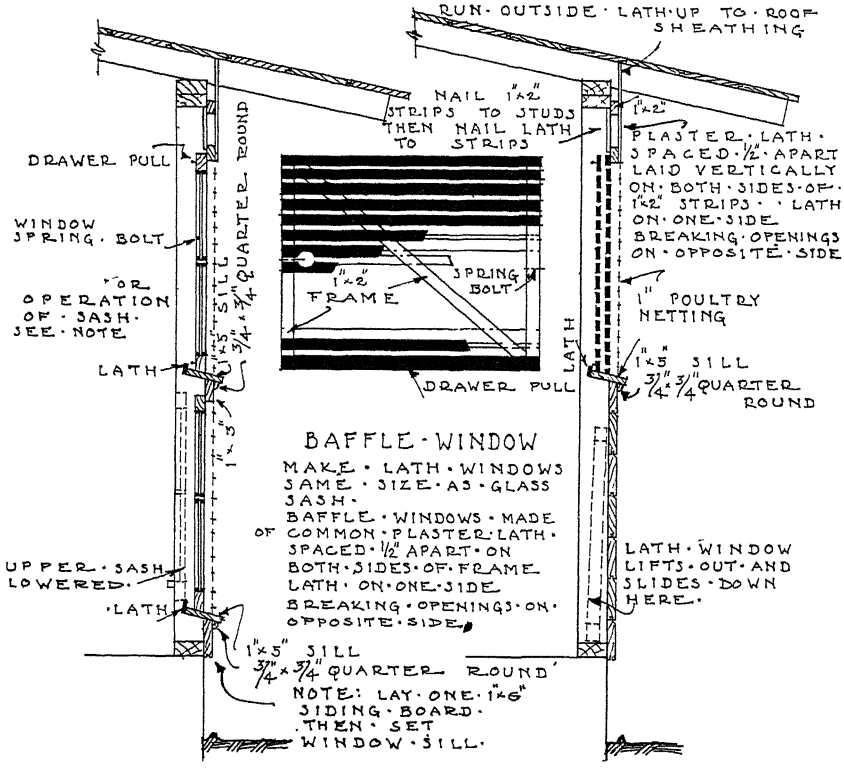
CROSS SECTION THRU REAR WALL

The rear wall construction of this house is the same as that shown in Fig. 10 except the dropping boards are 5 feet long instead of 6 feet. Also the dimensions and number of perches are different. The perches for this house are shown in Fig. 32.



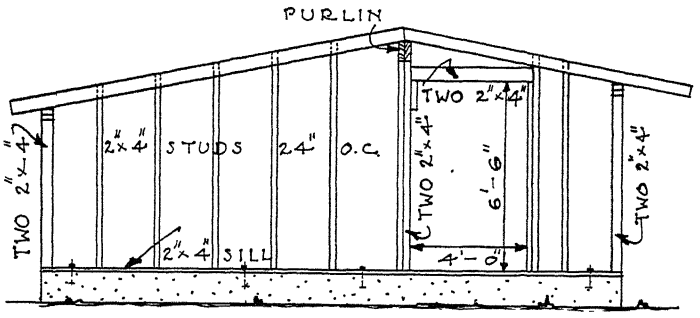
END ELEVATION

Fig. 29.—The door is four feet wide, giving plenty of space for cart. The 1" × 4" verge board at the end of the roof gives a finished appearance.



WINDOW DETAILS

Fig. 30.—The bottom siding board is nailed in place and the window sill set on it. The upper window and baffle sash can be lifted out and set in the space directly beneath them when more ventilation is desired. Each sash is held in place by two ordinary window spring bolts. The upper baffles are not removable. (Read Notes under Fig. 13).



END WALL FRAMING

Fig. 31.—The studs are spaced 24 inches on center and are doubled at the door frame and corners. The rear rafters are 2" × 6's and the front ones 2" × 4's.

Quantity Survey of Combination Roof Laying House, 20 by 30 Feet

Concrete

Foundation and post footing (5 cubic yards, 1:2:4 mixture)

Portland cement	30 sacks
Sand	2¼ yards
Stone	4½ yards

Floor (5½ cubic yards, 1:2:4 mixture)

Portland cement	33 sacks
Sand	2½ yards
Stone	5 yards

Top finish (1 cubic yard, 1:2 mixture)

Portland cement	13 sacks
Sand	1 cubic yard

Dimension Lumber

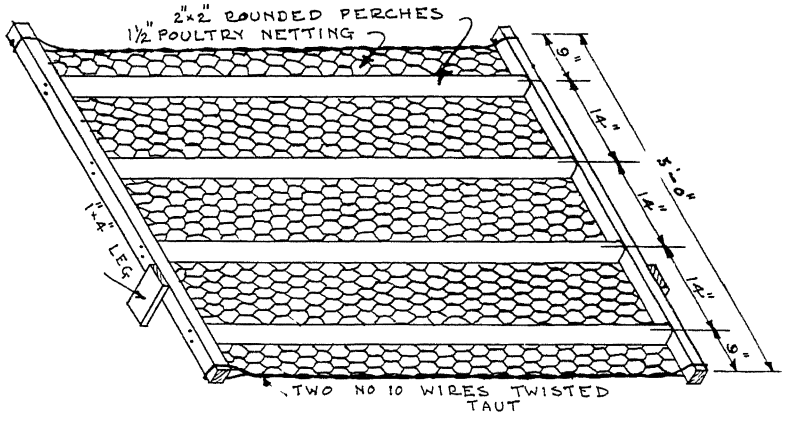
Use	No. Pieces	Size Inches	Length Feet
Front sill	1	2 × 4	16
Front sill	1	2 × 4	14
Rear sill	1	2 × 4	16
Rear sill	1	2 × 4	14
End sill	4	2 × 4	10
Front plate	2	2 × 4	16
Front plate	2	2 × 4	14
Rear plate	2	2 × 4	16
Rear plate	2	2 × 4	14
Front studs	13	2 × 4	6

Dimension Lumber—Continued

Use	No Pieces	Size Inches	Length Feet
Rear studs	18	2 × 4	5
End studs	10	2 × 4	16
Door header	2	2 × 4	4
Purlin	2	2 × 8	16
Purlin	2	2 × 8	14
Posts	2	4 × 4	8
Rafters	16	2 × 6	14
Rafters	16	2 × 4	10
Dropping board frame	2	2 × 4	16
Dropping board frame	2	2 × 4	14
Posts (2'-10" long)	1	2 × 4	16
Perches	30	2 × 2	6

Miscellaneous Lumber

875 ft. B. M. 1" × 8" shiplap roof sheathing
690 ft. B. M. 1" × 6" drop siding, in 14 and 16 ft. lengths
330 ft. B. M. 1" × 6" T. & G. or 1" × 8" shiplap inside sheathing, 14 and 16 ft. lengths
175 ft. B. M. 1" × 6" T. & G. or 1" × 8" shiplap dropping boards, 10 ft. lengths
200 lath
7 pieces 1" × 2", 12 ft. long, frame for lath baffle windows
3 pieces 1" × 5", 14 ft. long, window sills
1 piece 1" × 3", 14 ft. long, window sill support
1 piece 1" × 4", 12 ft. long, window sill
2 pieces 1" × 4", 10 ft. long, window casings
4 pieces ¾" × ¾", 14 ft. long, quarter round
2 pieces 1" × 4", 7 ft. long, corner boards
2 pieces 1" × 3", 7 ft. long, corner boards
1 piece 1" × 4", 12 ft. long, corner board
1 piece, 1" × 3", 12 ft. long, corner board
1 piece 1" × 6", 10 ft. long, door frame
1 piece 1" × 6", 12 ft. long, door frame
1 piece 1" × 8", 4 ft. long, door frame
1 piece 1" × 2", 12 ft. long, door stop
2 pieces 1" × 4", 14 ft. long, verge board
2 pieces 1" × 4", 10 ft. long, verge board
5 pieces 1" × 1", 10 ft. long, window guide



A PERCH SECTION

Fig. 32.—View of a perch section showing poultry netting nailed underneath. The perches are 2" × 2" with rounded tops. The end pieces are 2" × 2" but not rounded. Use 16d nails in nailing end piece to perches. Double No. 10 wire made taut by twisting is used across the front and rear to keep the edge of poultry netting from sagging.

Hardware, Roofing, Sash, Etc.

8 rolls prepared roofing
6 rolls tarred felt building paper for floor
8 6-light 10" × 12" sash
5 9-light 9" × 12" sash
24 window spring bolts
16 drawer pulls
30 linear ft. 1½" poultry netting, 5 feet wide
50 linear ft. 1" poultry netting, 30" wide
30 linear ft. 1" poultry netting, 12" wide
20 extra heavy strap hinge, 4"
3 extra heavy strap hinge, 6"
1 door latch
150 ft. No. 10 wire
3 lbs. 2d fine lath nails
25 lbs. 6d nails
15 lbs. 8d nails
15 lbs. 10d nails
3 lbs. 16d nails
3 lbs. 30d nails
1 lb. poultry netting staples
17 ½" × 12" bolts with nuts and washers

Shed Roof Brooder House, 10 by 12 Feet

This brooder house has been designed to meet the demand for a portable house large enough to brood 400 chicks at one time; small enough to be moved easily; and cheap enough to be within the means of any poultryman. The stove brooder has proven its superiority over the hen as a means of brooding large numbers of chicks with a minimum of labor, cost, and mortality. The success of a brooder stove depends to a large extent upon the kind of a house in which it is located. This house is large enough to permit of good ventilation and to allow the chicks room to get away from the brooder stove and into cool air.

The success of all poultrymen depends upon raising strong, vigorous pullets. This can best be accomplished by moving the chicks each year to fresh ground where there is an abundance of green grass, insects, and shade. This cannot be done unless the brooder house is portable. Experienced poultrymen realize that intestinal parasites and diseases can be kept out of the flock at a less expense by moving the house than by doctoring the sick birds. The house should be placed to face the south.

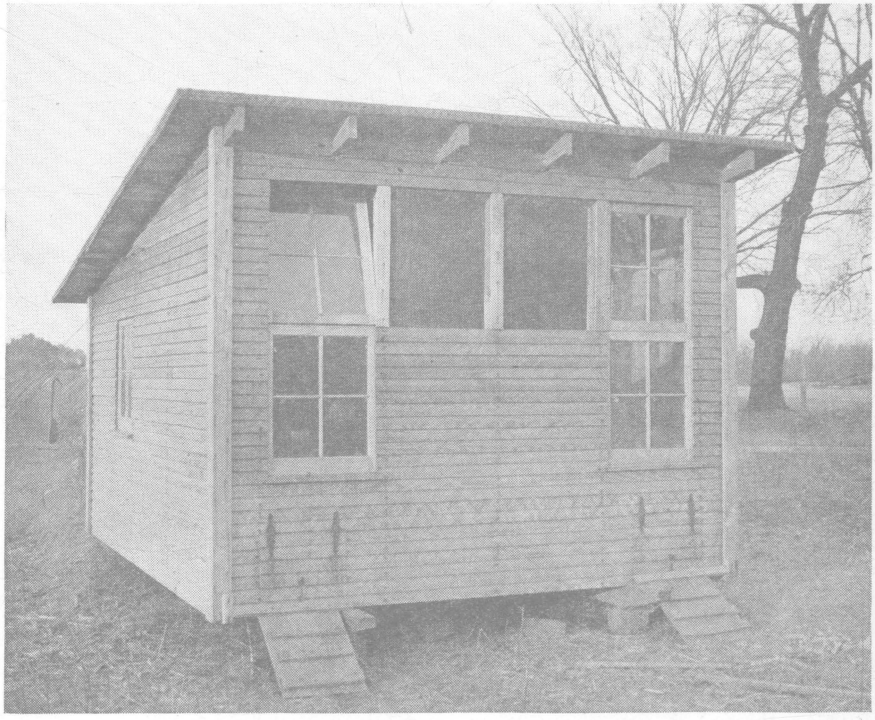
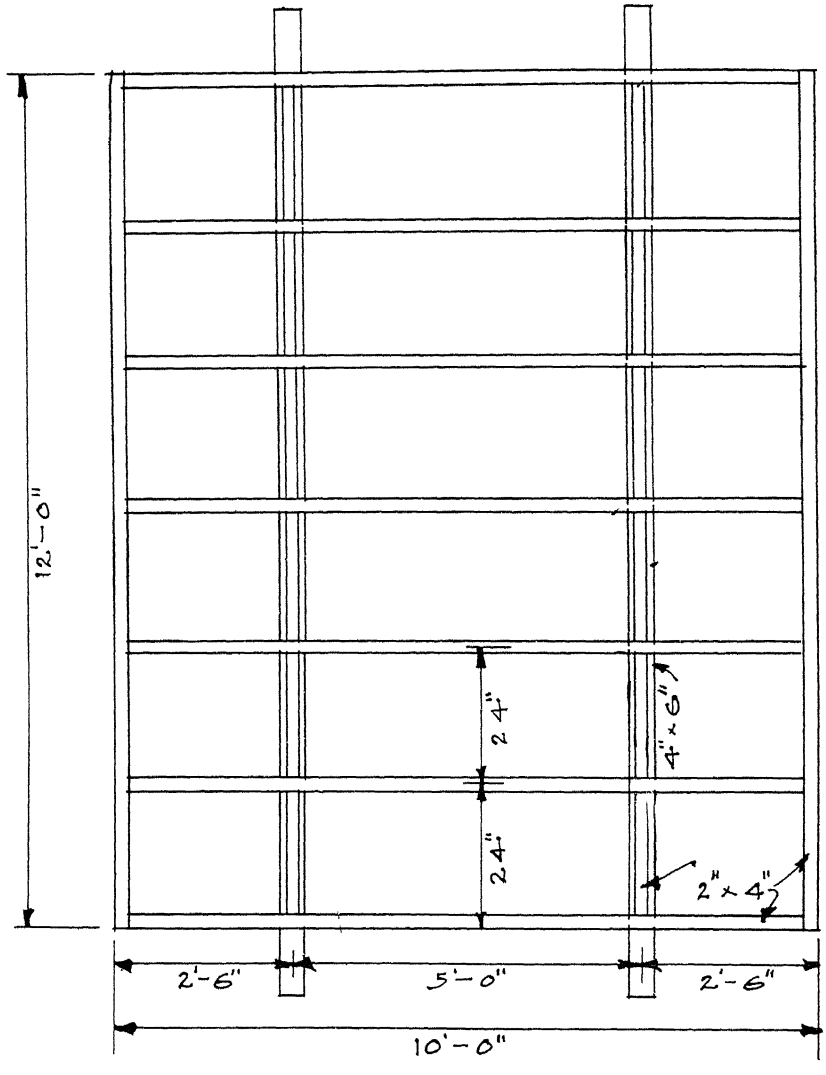


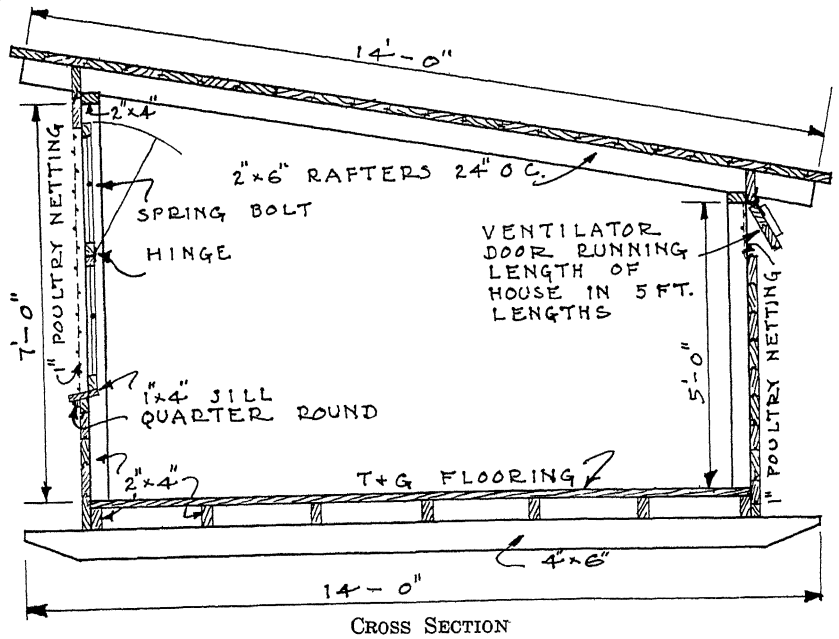
Fig. 33.—A brooder house on the University Farms.

Altho this house has been designed for a brooder house it can easily be changed into a laying house accommodating about 25 birds. Perches, dropping boards, and inside sheathing must be added. Two rows of perches will be necessary.



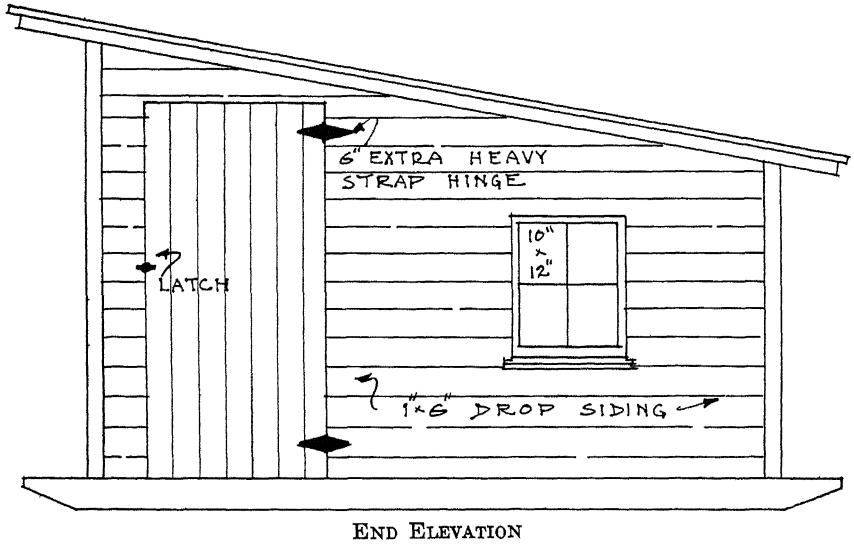
FLOOR FRAMING

Fig. 34.—The runners should be set on blocks to prevent them from rotting out. Creosoting the runners will more than double their life.



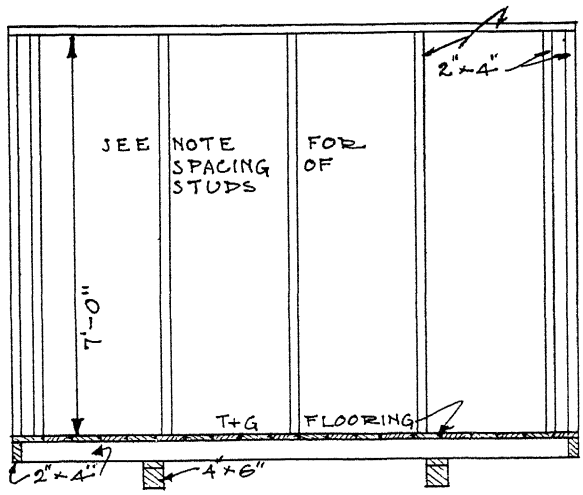
CROSS SECTION

Fig. 35.—Tongue and groove flooring free from knots will make a tight, draftless floor. The rear ventilator doors are made 2 siding boards wide, and run the length of the house in 5-foot lengths. The top sash of the front windows are hinged to the lower ones and open inwardly. Window spring bolts hold all the sash in place. Rear studs are spaced 24 inches on center. See Fig. 37 for spacing of front studs.



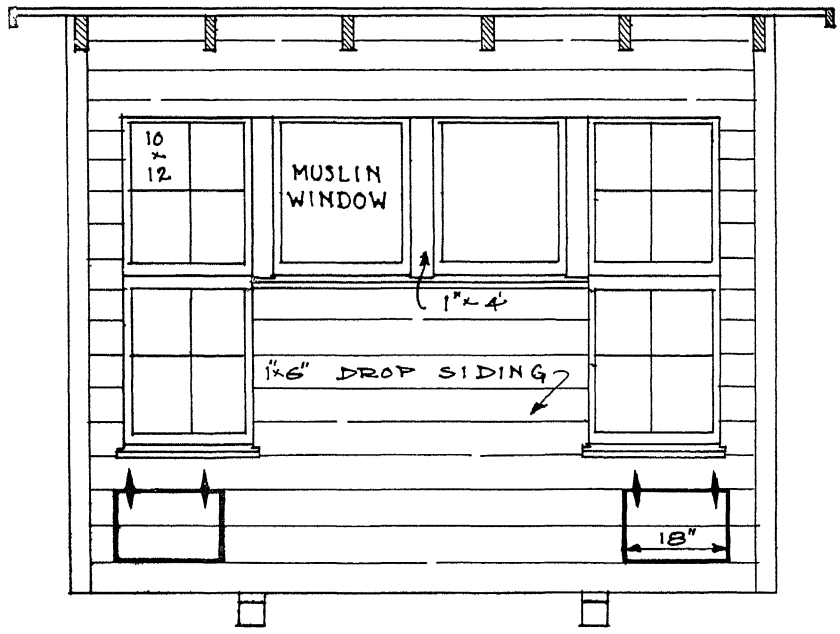
END ELEVATION

Fig. 36.—A window is also built in on the other end of the house.



FRONT FRAMING

Fig. 37. — Space studs width of the glass window sash plus small amount for "play." Place a stud on the center line of the building and space remainder of studs out both ways from this center stud. Rear studs are spaced 24 inches on center.



FRONT ELEVATION

Fig. 38.—Muslin windows are made same size as glass window sash. This permits substituting glass sash for muslin sash, in case the house gets too cold. Chick doors at the lower corners are 2 boards high by 18 inches long.

The muslin windows slide down as indicated. They should not be kept closed, except when it is necessary to keep the house warm. During the summer months, muslin windows, the side windows, and back ventilator shown in the cross section should be open. The front windows should be removed. The lath ventilator windows as shown in the plans for the laying houses, can be used in this house. However, during cold weather it may be necessary to cover them with muslin in order to keep the brooder house warm.

Quantity Survey for Shed Roof Brooder House, 10 by 12 Feet

Dimension Lumber

2 pieces 4″ × 6″, 14 ft. long, for runner
7 pieces, 2″ × 4″, 10 ft. long, for joists
4 pieces, 2″ × 4″, 12 ft. long, for joists
7 pieces, 2″ × 4″, 7 ft. long, for front stud
6 pieces, 2″ × 4″, 5 feet long, for rear stud
5 pieces, 2″ × 4″, 14 ft. long, for side stud
2 pieces, 2″ × 4″, 10 ft. long, for plate
6 pieces, 2″ × 6″, 14 ft. long, for rafter
145 feet B. M. 1″ × 6″, flooring, 12 ft. length
200 ft. B. M. 1″ ×8″ shiplap roof sheathing
340 ft. B. M. 1″ × 6″ drop siding
2 pieces 1″ × 2″, 10 ft. long, muslin window frames
3 pieces 1″ × 4″, 10 ft. long, window sill and casing
2 pieces ¾″ × ¾″, 12 ft. long, quarter round
1 piece 1″ × 4″, 16 ft., for corner boards
1 piece 1″ × 3″, 16 ft. for corner boards
1 piece 1″ × 4″, 12 ft., for corner boards
1 piece 1″ × 3″, 12 ft., for corner boards
1 piece 1″ × 6″, 14 ft., for door frame
2 pieces 1″ × 4″, 16 ft., for verge board

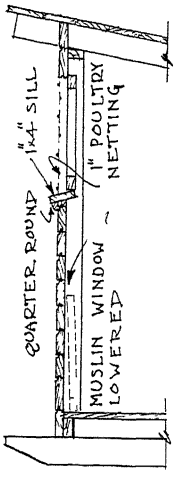


Fig. 39. — Detail of Muslin Window

Hardware, Roofing, Sash, Etc.

2 rolls prepared roofing
6 4-light 10″ × 12″ sash
18 linear ft., 1″ inch mesh poultry netting, 30 inches wide
8 extra heavy strap hinges, 4″
2 extra heavy strap hinges, 6″
1 door latch
4 butt hinges, 3″
2 yds. muslin
10 lbs. 6d nails
5 lbs. 8d nails
5 lbs. 10d nails
2 lbs. 20d nails
¼ lb. poultry netting staple
16 window spring bolts

Equipment for the Laying Houses

Suitable equipment is an important factor in connection with success with chickens. The following equipment was for the most part designed by Mr. D. C. Kennard of the Ohio Experiment Station. All equipment has been tested at the Station Poultry Plant, and is being used with satisfaction by hundreds of poultry keepers of Ohio.

BROODY COOP

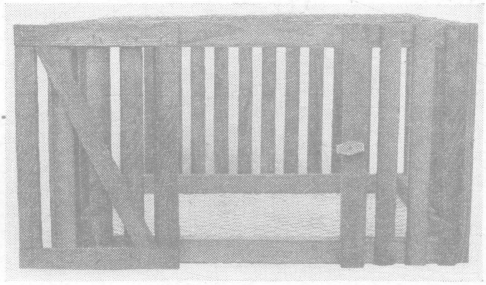


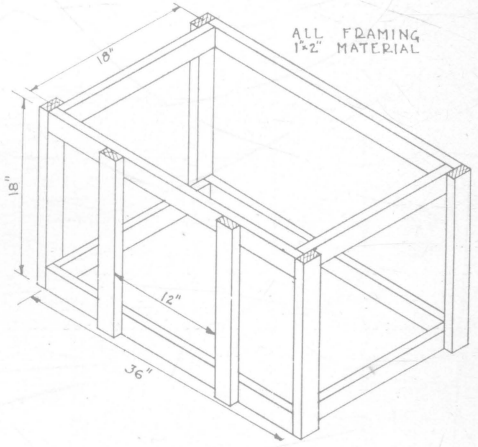
Fig. 40.—A finished coop.

Quantity Survey for Broody Coop

4 pieces 1″ × 2″, 3 feet long, for frame
10 pieces 1″ × 2″, 18 inches long, for frame
6 ft. 1″ mesh poultry netting, 18″ width
25 plastering lath
½ lb. lath nails
½ lb. 6d box nails
¼ lb. poultry netting staples
1 pair 1½″ butt hinges

FRAMING FOR COOP

Fig. 41.—A broody coop is a convenience for breaking up broody hens. A 1-inch mesh poultry netting bottom is self-cleaned and provides plenty of ventilation.



DRY MASH FEEDER

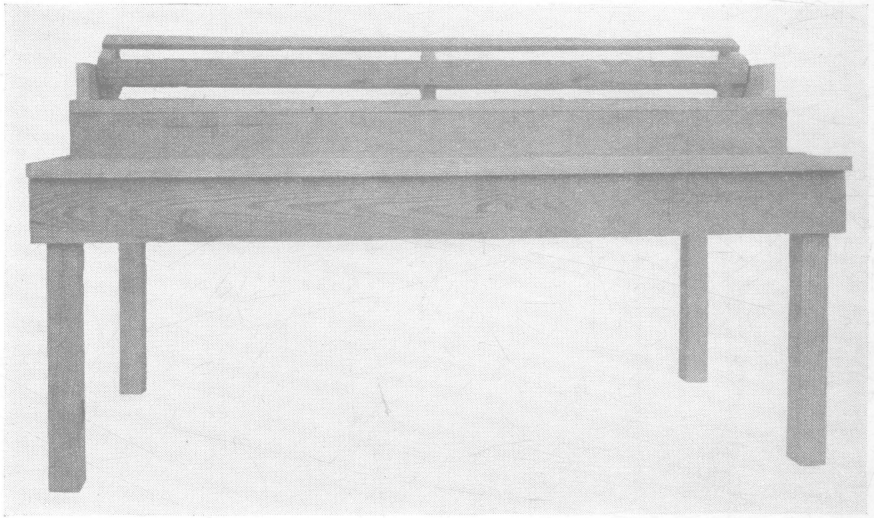


Fig. 42.—A dry mash feeder which will accommodate 75 birds.

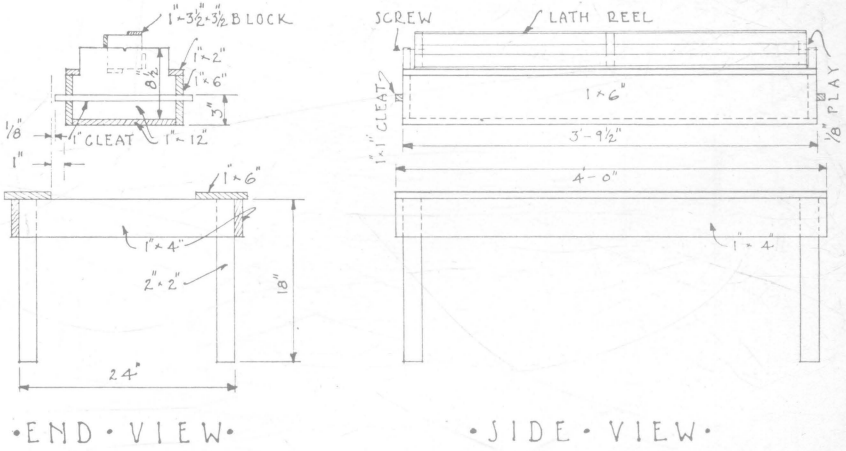


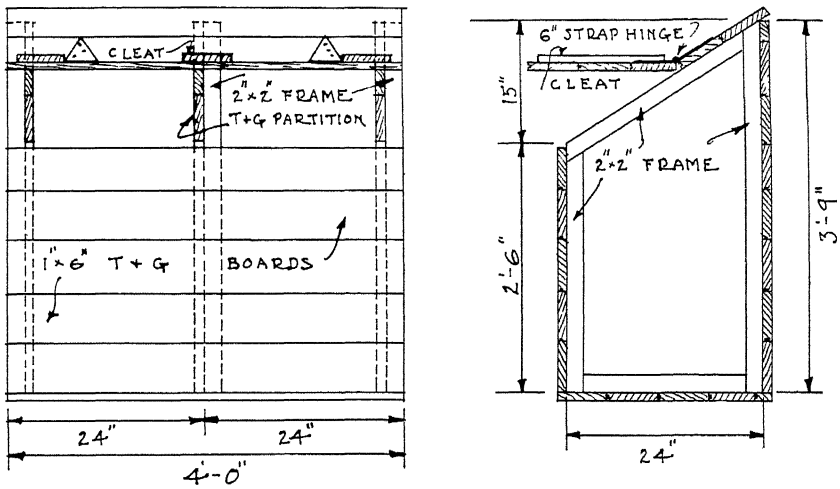
Fig. 43.—Plan of dry mash feeder. This feeder is waste proof, and keeps the feed clean. The feed is easily accessible, and with ample light the birds naturally eat more mash. This means more eggs as they are produced by the mash consumed rather than by the grain. The eggs are produced at lower cost per dozen, not only because of a greater number but also because the mash is consumed without waste. This feeder will accommodate 75 birds and will require additional mash about once each week.

The box is often built in a V-shape instead of rectangular as shown.

Quantity Survey for Dry Mash Feeder

4 pieces 2″ × 2″, 1½ ft. long
2 pieces 1″ × 4″, 2 ft. long
2 pieces 1″ × 4″, 4 ft. long
4 pieces 1″ × 6″, 4 ft. long
1 piece 1″ × 12″, 4 ft. long
2 pieces 1″ × 12″, 8½ inches long
2 pieces 1″ × 2″, 4 ft. long
2 pieces 1″ × 1″ 1½ ft. long
3 pieces 1″ × 3½″ × 3½″
4 lath
2 2½″ screws, No. 10
1 lb. 6d box nails

FEED BIN



Front View End View

Fig. 44.—This grain bin is divided into two parts—one for mash, the other for grain. Each division holds 8 bushels.

Quantity Survey for Feed Bin

3 pieces 2″ × 2″, 3′-9″ long
6 pieces 2″ × 2″, 2′-6″ long
3 pieces 2″ × 2″, 2′-0″ long
54 ft. B. M. T. & G. boards, 4 ft. long
2 strap hinges, 6″
2 lb. 6d box nails

NEST RACK

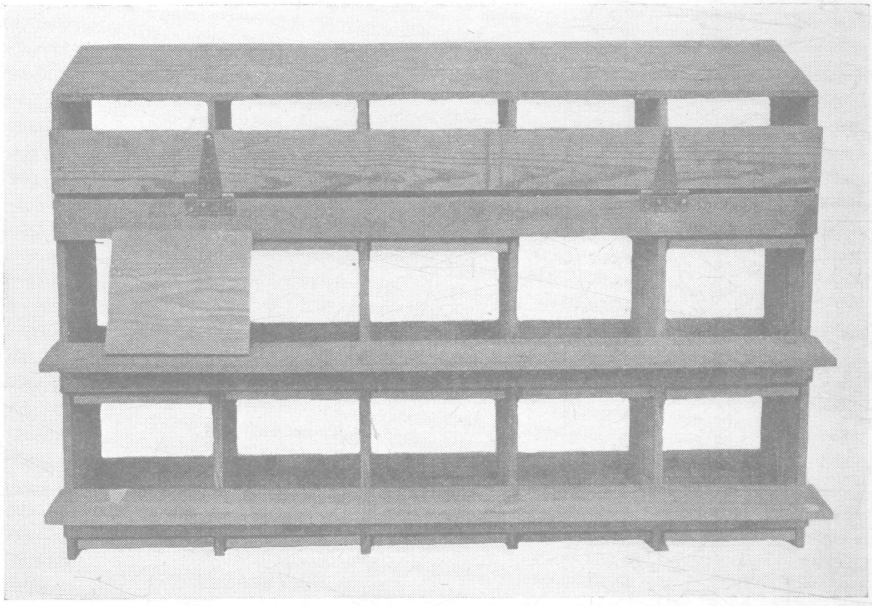
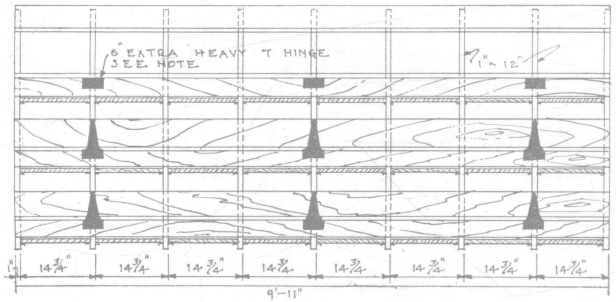
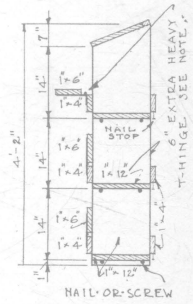


Fig. 45.—Nest rack. The nest bottoms rest on nails driven part way into the 1″ × 12″ partitions, and can easily be removed for cleaning.



Front View



Cross Section

Fig. 46.—These nest racks are fastened against the end walls. Their location is shown on the floor plans. This arrangement is superior to having the nests underneath the dropping board where they are likely to harbor disease and lice. These nests are easy to reach for cleaning and disinfecting.

The hinged door-like shelves or platforms serve two purposes: (1) The birds can walk along them to enter the nests; (2) In case the birds tend to roost in the nests at night the platforms can be closed up. Put the hinges on backward so they will act as brackets.

A sloping top prevents the hens roosting on top of the nest rack. Allowing one nest for five hens this nest rack will take care of 120 birds. The photograph shows a smaller nest rack than the drawing.

Quantity Survey for Nest Rack

3 pieces 1″ × 12″, 12 ft. long (each piece cuts into 3 pieces 4′-2″long)
6 pieces, 1″ × 4″, 10 ft. long
3 pieces 1″ × 6″ 10 ft. long
4 pieces 1″ × 12″ 10 ft. long
1 piece 1″ × 3″ 10 ft. long
8 6″ extra heavy T hinges
No. 10 screws, ¾″
2 lbs. 6d box nails

CATCHING CRATE

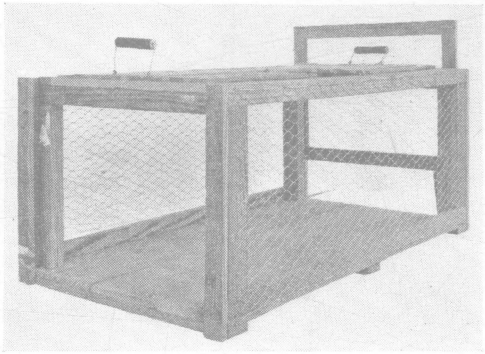


Fig. 47—Catching Crate

No poultry keeper who has a flock of 50 or more birds can afford to be without a catching crate. Anyone who keeps over 150 birds should have three or four.

Successful poultry management requires frequent handling of the birds when culling, eradicating lice, and transferring them to other quarters. Without suitable equipment, catching and handling the birds is a dreadful job, and often worse for the birds than for the caretaker. With a crate of this kind, the birds can be caught and handled easily without frightening them, as this usually results in considerable loss in egg production.

In catching, the chickens are shut in the house, the crate is set outside in front of the exit, and the chickens are driven into the crate. In case of a large number of chickens, three or four of the crates are set end to end and all filled at one time, then the end gates are put into place to enclose the birds in the different crates. When it is desired to catch the birds inside the house, the crates are placed in one corner and the birds driven into them. A small wire panel over the end and another at the side away from the wall aid greatly in guiding the birds into the crate.

It will be observed that the crate has two end gates, and a small sliding door on top.

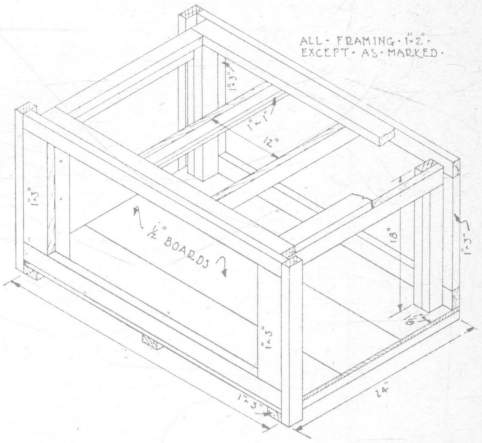


Fig. 48.—Framing—The crate is 3′ long, 2′ wide, and 18″ high

Quantity Survey for Catching Crate

6 pieces 1″ × 2″, 3′ long
12 pieces 1″ × 2″, 18″ long
3 pieces 1″ × 3″, 24″ long
10 pieces 1″ × 2″, 24″ long
4 pieces 1″ × 2″, 20″ long
4 pieces 1″ × 3″, 18″ long
2 pieces 1″ × 1″, 24″ long
8 bd. ft. ½″ boards, 3 ft. long
10 ft., 18″ width, 1″ mesh poultry netting
1 lb. 6d box nails
¼ lb. lath nails
¼ lb. poultry netting staples
10 plastering lath

WATERING STAND

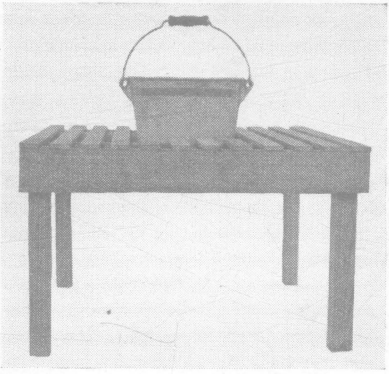


Fig. 49.—Practical Watering Stand.

Of all the fountains and watering devices on the market the common 14-quart galvanized water pail has many points of advantage when provided with a stand as illustrated. The water is kept clean and is easily accessible. The birds will take all but the last 1 or 2 inches of the water, which leaves a convenient amount to rinse the pail before putting in a fresh supply.

During very cold weather the pail filled with warm water will supply the birds for some time before freezing. In case the water does freeze, the ice is readily removed by heat or by the use of warm water. The pail is easy to clean and disinfect. The platforms may be made for one, two, or three pails as desired. This one-bucket stand will accommodate 50 birds.

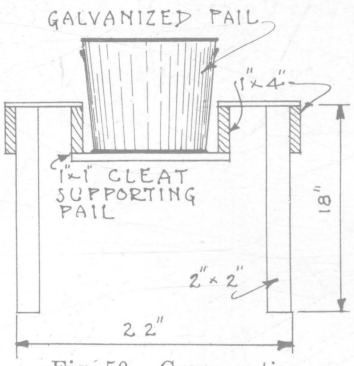


Fig. 50.—Cross section

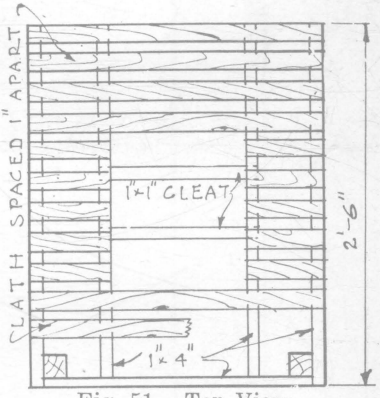


Fig. 51.—Top View.

Quantity Survey for Water Stand

4 pieces 2″ × 2″, 18″ long
4 pieces 1″ × 4″, 2′-6″ long
2 pieces 1″ × 4″, 22″ long
2 pieces 1″ × 1″, 18″ long
7 plastering lath
¼ lb. 6d box nails
¼ lb. 3d lath nails